(12) INTERNATIONAL APPLICATION PUBLISHED UNDER THE PATENT COOPERATION TREATY (PCT)

(19) World Intellectual Property Organization

International Bureau



(43) International Publication Date 29 December 2004 (29,12,2004)

PCT

(10) International Publication Number WO 2004/113158 A3

(51) International Patent Classification⁷: 34/04, 43/01

E21B 29/12,

(21) International Application Number:

PCT/US2004/018981

(22) International Filing Date: 16 June 2004 (16.06.2004)

(25) Filing Language:

English

(26) Publication Language:

English

(30) Priority Data:

60/478,988

17 June 2003 (17.06.2003) US

(63) Related by continuation (CON) or continuation-in-part (CIP) to earlier application:

US

09/992,220 (CIP)

Filed on

6 November 2001 (06.11.2001)

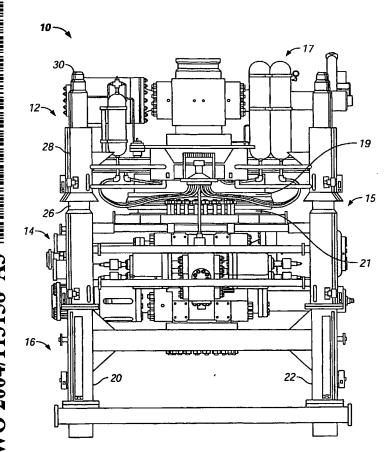
(71) Applicant (for all designated States except US): WORLD-WIDE OILFIELD MACHINE, INC. [US/US]; 11809 Canemont, Houston, Texas 77035 (US).

(72) Inventors; and

- (75) Inventors/Applicants (for US only): SUNDARARAJAN, Alagarsamy [US/US]; 22002 Castlewind Circle, Katy, Texas 77450 (US). MCCREADIE, Tom [US/US]; 11809 Canemont, Houston, Texas 77035 (US).
- (74) Agent: NASH, Kenneth, L.; Law Office of Kenneth L. Nash, P. O. Box 680106, Houston, Texas 77268-0106 (US).
- (81) Designated States (unless otherwise indicated, for every kind of national protection available): AE, AG, AL, AM, AT, AU, AZ, BA, BB, BG, BR, BW, BY, BZ, CA, CH, CN, CO, CR, CU, CZ, DE, DK, DM, DZ, EC, EE, EG, ES, FI, GB, GD, GE, GH, GM, HR, HU, ID, IL, IN, IS, JP, KE, KG, KP, KR, KZ, LC, LK, LR, LS, LT, LU, LV, MA, MD, MG, MK, MN, MW, MX, MZ, NA, NI, NO, NZ, OM, PG,

[Continued on next page]

(54) Title: LIGHTWEIGHT AND COMPACT SUBSEA INTERVENTION PACKAGE AND METHOD



(57) Abstract: The present invention discloses apparatus and methods for a lightweight subsea intervention package (10) that may be installed using vessels with a smaller lifting capacity than semi-submersible platforms so that the subsea intervention package (10) can be transported, installed, and removed from a subsea well in less time and with less cost. In one embodiment, the present invention comprises a lower riser package (14) for controlling the subsea well which utilizes two hydraulically activated gate valves (36) (38). An emergency disconnect package (12) is secured to the lower riser package (14) utilizing a disconnect mechanism. The emergency disconnect package (12) is operable to seal the bottom of a riser if the disconnect mechanism is activated to thereby minimize environmental leakage of fluid from the riser.

WO 2004/113158 A3



PH, PL, PT, RO, RU, SC, SD, SE, SG, SK, SL, SY, TJ, TM, TN, TR, TT, TZ, UA, UG, US (patent), UZ, VC, VN, YU, ZA, ZM, ZW.

(84) Designated States (unless otherwise indicated, for every kind of regional protection available): ARIPO (BW, GH, GM, KE, LS, MW, MZ, NA, SD, SL, SZ, TZ, UG, ZM, ZW), Eurasian (AM, AZ, BY, KG, KZ, MD, RU, TJ, TM), European (AT, BE, BG, CH, CY, CZ, DE, DK, EE, ES, FI, FR, GB, GR, HU, IE, IT, LU, MC, NL, PL, PT, RO, SE, SI, SK, TR), OAPI (BF, BJ, CF, CG, CI, CM, GA, GN, GQ, GW, ML, MR, NE, SN, TD, TG).

Declaration under Rule 4.17:

- of inventorship (Rule 4.17(iv)) for US only

Published:

- with international search report
- before the expiration of the time limit for amending the claims and to be republished in the event of receipt of amendments
- (88) Date of publication of the international search report: 3 March 2005

For two-letter codes and other abbreviations, refer to the "Guidance Notes on Codes and Abbreviations" appearing at the beginning of each regular issue of the PCT Gazette.

INTERNATIONAL SEARCH REPORT

International application No.

PCT/US04/18981

A. CLASSIFICATION OF SUBJECT MATTER							
PC(7) : E21B 29/12, 34/04, 43/01 US CL : 166/340, 351, 361, 363, 364, 365, 368							
According to International Patent Classification (IPC) or to both national classification and IPC							
B. FIELDS SEARCHED							
Minimum documentation searched (classification system followed by classification symbols) U.S.: 166/340, 351, 361, 363, 364, 365, 368							
Documentation searched other than minimum documentation to the extent that such documents are included in the fields searched							
Electronic data base consulted during the international search (name of data base and, where practicable, search terms used) EAST							
C. DOCUMENTS CONSIDERED TO BE RELEVANT							
Category *	Citation of document, with indication, where appropriate, of the relevant passages		Relevant to claim No.				
Y	US 6,053,252 A (EDWARDS) 25 April 2000 (25.04.2000), see figures 1-5.		1-23				
A	US 6,062,312 A (WILKINS) 16 May 2000 (16.05.2000), see all figures.		1-23				
A, E	US 6,745,840 B (HEADWORTH) 08 June 2004 (08.06.2004), see whole document.		1-23				
A, E	US 6,763,889 B (RYTLESKI et al) 20 June 2004 (20.06.2004), see whole docuement.		1-23				
A US 6,460,621 A (FENTON et al) 08 October 2002 (08.10.2002), see figures.		8.10.2002), see figures.	1-23				
		••					
Further documents are listed in the continuation of Box C. See patent family annex.							
Special categories of cited documents: "A" document defining the general state of the art which is not considered to be of particular relevance "E" earlier application or patent published on or after the international filing date "L" document which may throw doubts on priority claim(s) or which is cited to establish the publication date of another citation or other special reason (as specified)		"T" later document published after the international filing date or priority date and not in conflict with the application but cited to understand the principle or theory underlying the invention "X" document of particular relevance; the claimed invention cannot be considered novel or cannot be considered to involve an inventive step when the document is taken alone document of particular relevance; the claimed invention cannot be considered to involve an inventive step when the document is combined with one or more other such documents, such combination being					
				"O" document referring to an oral disclosure, use, exhibition or other means		obvious to a person skilled in the art	-
				"P" document published prior to the international filing date but later than the priority date claimed		"&" document member of the same patent family	
Date of the actual completion of the international search 21 October 2004 (21.10.2004)		Date of mailing of the international search report 0 6 JAN 2005					
	ailing address of the ISA/US	Authorized officer	7 1 //				
Mail Stop PCT, Attn: ISA/US Commissioner for Patents P.O. Box 1450		Authorized officer Thomas Will The land of the part o					
	xandria, Virginia 22313-1450	Telephone No. 703.306.4198					

Form PCT/ISA/210 (second sheet) (January 2004)